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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,607	03/21/2005	Jeroen Anton Johan Leijten	NL02 0894 US	4040

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EXAMINER	
ELLIS, RICHARD L	
ART UNIT	**PAPER NUMBER**
2183	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/528,607	LEIJTEN ET AL.	
	Examiner	Art Unit	
	Richard Ellis	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 March 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3 21 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 1-10 are presented for examination.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The current title is imprecise.

3. The information disclosure statement ("IDS") filed March 21, 2005 fails to fully comply with 37 CFR 1.98(b)(4) which states:

> (4) Each foreign patent or published foreign patent application listed in an information disclosure statement must be identified by the ***country or patent office*** which issued the patent or published the application, an appropriate document number, and the publication date indicated on the patent or published application.

Applicant is reminded that "Matsushita Electric Ind. Co." and "Hewlett Packard Co." are neither countries nor patent offices. The correct designation for European Patent Office documents is "EPO" and for PCT documents is "WIPO".

Applicant's IDS fails to meet the requirements of 37 CFR 1.98(b)(4) by listing all foreign documents with incorrect designations. The incorrect designations have been corrected to the proper designations.

4. 35 USC § 101 reads as follows:

> "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title".

5. Claims 9-11 are rejected under 35 USC § 101 because the claimed invention is directed to non-statutory subject matter. Claims 9-11 claim computer programs per. se. However, computer programs per. se. are non-statutory subject matter:

> "Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and USPTO personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material. When a computer program is claimed in a process where the computer is executing the computer program's instructions, USPTO personnel should treat the claim as a process claim. See paragraph IV.B.2(b), below. When a computer program is recited in conjunction with a physical structure, such as a computer memory, USPTO personnel should treat the claim as a product claim. See paragraph IV.B.2(a), below." (MPEP § 2106.01)

6. Claim 12 is rejected under 35 USC § 101 because the claimed invention is directed to non-statutory subject matter. Claim 12 claims an "information carrier" with no definition of what constitutes an "information carrier". Similarly, the specification uses the phrase "information carrier" without ever defining the metes and bounds of that phrase. Accordingly,

"information carrier" is not seen as limited specifically to computer readable media encoded with a computer program and is therefore directed to non-statutory subject matter. I.e., "information carrier" is of such breadth that a sheet of paper with hand written program code thereupon would be encompassed by the term "information carrier" because the sheet of paper is carrying information.

> "Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions." (MPEP § 2106.01)

7. Claims 9-12 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claims(s) to place the claim(s) in proper dependent form.

In the case of claim 9, parent claim 1 defines a processing apparatus that will inherently contain an instruction set, including an instruction having an immediate value for the immediate issue slot. As such, claim 9 adds no limitations that are not already inherently present in it's parent claim.

In the case of claim 10, the claim requires a computer program instructing a computer system to perform the method of claim 8. However, because claim 8 is a method claim, it is inherent that in a computer system it will take the form of a computer program and as such, claim 10 does not add any further limitations that are not already inherently present in claim 8.

In the case of claim 11, the claim requires a compiler program product for producing an instruction for the system of claim 1. However, the system of claim 1 will have inherently had it's instructions that it executes produced by a compiler and therefore the mere claiming of the presence/existence of a compiler does not add any limitation to the claim that is not already

inherently present in the parent claim.

In the case of claim 12, the processing system of parent claim 1 will inherently contain an information carrier containing a sequence of instructions to program it to perform a function. Therefore, the claiming of the presence/existence of an information carrier does not add any limitation to the claim that is not already inherently present in the parent claim.

8. The drawings are objected to because:

The structural elements are merely labeled with identifying numbers/abbreviations, see Figures 1-2, where such abbreviations are not commonly accepted well known abbreviations. Since these elements are not illustrated as well known graphical representations / abbreviations, Applicant is required to provide suitable meaningful legends under 37 CFR § 1.83(a) and 1.84(o).

Correction is required.

9. The drawings are objected to under 37 CFR § 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "instruction set" (claim 9), "computer program" (claim 10), "compiler program product" (claim 11), and "information carrier" (claim 12) must be shown or the feature canceled from the claim. No new matter should be entered.

10. Corrected drawing sheets are required in reply to this Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the

changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

11. The following is a quotation of the appropriate paragraphs of 35 USC § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a)shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. The following is a quotation of 35 USC § 103 which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

(c) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

13. This application currently names joint inventors. In considering patentability of the claims under 35 USC § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 USC § 102(f) or (g) prior art under 35 USC § 103.

14. Claims 1-4 and 6-12 are rejected under 35 USC § 102(b) as being clearly anticipated by Slavenburg, U.S. Patent 6,122,722.

Slavenburg taught (e.g. see figs. 1-11) the invention as claimed (as per claim 1), including a data processing ("DP") system comprising:

A. a processing apparatus (fig. 3) conceived for processing data, based on control signals (IIR) generated from a set of instructions being executed in parallel (ISSUE1 ... ISSUE3), comprising;

B. a plurality of issue slots (fig. 4, 410), wherein each issue slot comprises a plurality of functional units (fig. 3, "CONTROL UNIT" "CONST UNIT" "ALU_1 UNIT" "ALU_2 UNIT", "MUL UNIT", "FPU UNIT", "MEM UNIT"), the plurality of issue slots

being controlled by a set of control words corresponding to the set of instructions (figs. 6b, 9, 10);

C. characterized in that the processing apparatus further comprises a dedicated issue slot (fig. 3, "CONST UNIT") arranged for loading an immediate value (fig. 4, 430, "CONSTANT FIELD") in dependence upon a dedicated instruction comprising the immediate value (fig. 4, 430).

15. As to claim 2, Slavenburg taught that the dedicated issue slot comprised a single functional unit arranged for only executing the dedicated instruction (fig. 3, "CONST UNIT").

16. As to claim 3, Slavenburg taught a dedicated register file for storing said immediate value (403), the dedicated register file being accessible by the dedicated issue slot (402).

17. As to claim 4, Slavenburg taught that the processing apparatus was a VLIW processor (col. 1 lines 22-25) and wherein the set of instruction were grouped in a VLIW instruction (fig. 4, 410).

18. As to claim 6, Slavenburg taught a register file (fig. 3, 403) associated with the plurality of issue slots (fig. 3).

19. As to claim 7, Slavenburg taught a connection network for coupling the plurality of issue slots to the register file (fig. 3, 401, 402).

20. As to claims 8-12, they do not teach or define above the invention claimed in claims 1-7 and are therefore rejected under Slavenburg for the same reasons set fourth in the rejection of claims 1-7, supra. As to claims 9 and 10, Slavenburg taught an instruction set containing a dedicated instruction having an immediate value that causes the dedicated issue slot to load the immediate value when executed (fig. 4, 430). As to claim 11, Slavenburg taught a compiler (col. 2 lines 47-55). As to claim 12, it is inherent that Slavenburg's programs for his processor will be contained on "information carriers" and consist of instructions for performing his disclosed functionality.

21. Claim 5 is rejected under 35 USC § 103 as being unpatentable over Slavenburg, U.S. patent 6,122,722, in view of Hampapuram et al., U.S. Patent 5,787,302.

22. As to claim 5, Slavenburg did not teach that the VLIW instruction was a compressed instruction, comprising dedicated bits for encoding NOP operations. However, Hampapuram et al. taught compressed VLIW instructions (col. 2 lines 13-15) comprising dedicated bits for encoding NOP operations (col. 8 lines 13-15 and col. 12 lines 19-23).

23. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Hampapuram et al.'s VLIW compression system with Slavenburg's system because of Hampapuram et al.'s teaching that VLIW systems without compression cause code size increases (col. 1 lines 46-64) and Slavenburg's suggestion that code size increase in a VLIW is a problem (col. 3 lines 5-12).

24. Claims 1-4 and 6-12 are rejected under 35 USC 102(b) as being clearly anticipated by Mehra, U.S. Patent 5,974,537.

Mehra taught (e.g. see figs. 1-6) the invention as claimed (as per claim 1), including a data processing ("DP") system comprising:

A. a processing system (fig. 3) conceived for processing data based on control signals generated from a set of instructions being executed in parallel (320), comprising;

B. a plurality of issue slots (321 ... 327), wherein each issue slog comprises a plurality of functional units (331 ... 337), the plurality of issue units being controlled by a set of control words corresponding to the set of instructions;

C. characterized in that the processing apparatus further comprises a dedicated issue slot arranged for loading an immediate value (fig. 3, 331) in dependence upon a dedicated instruction comprising the immediate value (321, fig. 4, 410).

25. As to claim 2, Mehra taught that the dedicated issue slot comprised a single functional unit arranged for only executing the dedicated instruction (331).

26. As to claim 3, Mehra taught a dedicated register file for storing the immediate value, the dedicated register file being accessible by the dedicated issue slot (321).

27. As to claim 4, Mehra taught that the processing apparatus was a VLIW processor (col.

1 lines 8-12) and wherein said set of instructions was grouped in a VLIW instruction (fig. 3, 320).

28. As to claim 6, Mehra taught a register file associated with the plurality of issue slots (fig. 3, 340).

29. As to claim 7, Mehra taught a connection network for coupling the plurality of issue slots and the register file (fig. e, 340).

30. As to claims 8-12, they do not teach or define above the invention claimed in claims 1-4 and 6-7 and are therefore rejected under Mehra for the same reasons set fourth in the rejection of claims 1-4 and 6-7, supra. As to claims 9 and 10, Mehra taught an instruction set containing a dedicated instruction having an immediate value that causes the dedicated issue slot to load the immediate value when executed (fig. 4, 410). As to claim 11, Mehra taught a compiler (col. 2 lines 31-38). As to claim 12, it is inherent that Mehra's programs for his processor will be contained on "information carriers" and consist of instructions for performing his disclosed functionality.

31. Claim 5 is rejected under 35 USC § 103 as being unpatentable over Mehra, U.S. patent 5,974,537, in view of Hampapuram et al., U.S. Patent 5,787,302.

32. As to claim 5, Mehra did not teach that the VLIW instruction was a compressed instruction, comprising dedicated bits for encoding NOP operations. However, Hampapuram et al. taught compressed VLIW instructions (col. 2 lines 13-15) comprising dedicated bits for encoding NOP operations (col. 8 lines 13-15 and col. 12 lines 19-23).

33. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Hampapuram et al.'s VLIW compression system with Mehra's system because of Hampapuram et al.'s teaching that VLIW systems without compression cause code size increases (col. 1 lines 46-64) resulting in a performance degradation (col. 1 lines 48-52).

34. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) days from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of the application (see 35 USC 133, MPEP 710.02,

710.02(b)).

35. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Richard Ellis whose telephone number is (571) 272-4165. The Examiner can normally be reached on Monday through Thursday from 7am to 5pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Eddie Chan, can be reached on (571) 272-4162. The fax phone number for the USPTO is: (703)872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-2100.

Richard Ellis
December 19, 2006

RICHARD L. ELLIS
RIMARY EXAMINER